

REMARKS

The Applicant appreciates the Examiner's careful examination of this case. Reconsideration and re-examination are respectfully requested in view of the instant remarks.

Paragraphs 1 and 2 of the Office Action reject claims 1-3. In view of the objections raised by the Examiner, claims 1 – 3 have been cancelled and they are replaced by new claims 4 and 5. The new claim 4 is a combination of original claims 1 and 2, plus further features. The combination of claims 1 and 2 meets the objection in paragraph 4 of the Office Action. The new claim 5 corresponds to original claim 3. The new claim 5 has been put into independent form, thereby meeting the objection to original claim 3 as set out in paragraph 4 of the Office Action.

With regard to paragraphs 5 and 6 of the Office Action, the objections of the Examiner have been carefully considered and the new claims 4 and 5 employ wording which is believed to be acceptable to the Examiner. The multiple use of the phrase "being such that" has been avoided. In addition, the new claim 4 has been made more specific in that it is now directed to the collimated visual display apparatus comprising the aspheric screen of original claim 1 plus a curved collimating mirror. Still further, the collimated visual display apparatus of the new claim 4 has been specified to be such that the aspheric screen has an outer curved surface that is viewed via the curved collimating mirror by a user of the

collimated visual display apparatus. The new claim 5, which corresponds to original claim 3 but put into independent form, includes all of the features of the new claim 4.

With regard to paragraph 7 of the Office Action, it is still a feature of new claim 4 that the aspheric screen comprises the three sections mentioned by the Examiner.

With regard to paragraphs 8, 9 and 10 of the Office Action, the Applicant was obliged to the Examiner for indicating his understanding of the cited Redington et al patent and the Yoshimatsu et al patent. The Applicant respectfully submits that these two patents do not disclose quite as much as indicated by the Examiner.

More specifically, the Examiner states that Redington et al provides an explicit teaching of a flat centre section having curved sections on either side of the flat section for a projection screen. The Redington et al abstract confirms that the central portion of the screen is flat or having a large radius of curvature. The Redington et al Figure 2 also confirms that the screen has a flat centre section 10. Figure 7 also shows a screen with a substantially flat central portion 20 between two curved portions 21, 22. At column 2 lines 61 et seq, Redington et al discloses a screen 10 in Figure 2 with a flat central portion. Column 4 lines 41 et seq refer to Figure 7 which has the substantially flat central portion 20.

Figures 2 – 4 of Redington et al show cross sections through various embodiments, see also column 2 lines 61 – 63. All of the cross sections shown are horizontal cross sections through the screen at an arbitrary point. The final three-dimensional shape of the screen of Redington et al is shown in Figure 1. This confirms that the central portion 10 is substantially flat and that this central portion is located in a vertical plane with the curved sections 11 on either side being curved in one direction only.

It is respectfully submitted that all of the above mentioned passages of Redington et al confirm that the Redington et al screen has a flat or substantially flat central portion. This is in contrast to the Applicant's new claim 4 (and original claim 1) which requires that the central third part is a short cylindrical center section. Thus the Applicant's claim 4 does not have a flat centre section as disclosed by Redington et al.

With regard to Yoshimatsu et al, it is noted that the abstract of Yoshimatsu et al states that "the mirror has a planar surface reflection area and a curved surface reflection area continuous with the planar reflection area." This does not disclose a screen, but a mirror having a specific shape.

Figure 11 of Yoshimatsu et al includes the main screen 13. No reference is made in Yoshimatsu et al to the shape of this main screen 13. In Figure 11, the cross section shows the main screen 13 to be planar.

Figure 12 of Yoshimatsu et al shows another embodiment of the invention with the main screen 13 indicated in the centre of the display. At column 6 lines 56 – 58, Yoshimatsu et al refers to the “curved surfaces of the reflective mirror 8” as the only curved surfaces present.

Figure 13 of Yoshimatsu et al shows another embodiment of the invention where the main screen area 13 and the sub-screen areas 14 are above and below the main screen. Figure 13 shows a cross section through the display, again with the main screen area 13 being planar. There is no reference made in Yoshimatsu et al to the shape of the main screen 13 in Figure 13.

Yoshimatsu et al refers to the main area 13 of the screen being that area of the screen which provides an undistorted image to the user, see column 4 line 26. It is known to one skilled in the art that this main area 13 would need to be planar so as not to introduce distortion into the image viewed by the user in this area of the screen, the image having been reflected by the planar section of the mirror as disclosed in Yoshimatsu et al.

Column 3 lines 8 – 49 of Yoshimatsu et al describe the mirror as having a “flat, or planar, area and a curved, or non-planar, area” (lines 10 – 11). Thereafter there is described one embodiment of the invention at lines 22 – 24 as “including a display device, the image reflected by the planar surface of the mirror, and projected onto the screen, is a normal image without distortion”. This portion of the Yoshimatsu et al specification makes no reference to a preferred shape or

curvature of the screen of the display apparatus. Reference is only made to the curved portion of the mirror. As stated above, one skilled in the art would use a planar screen to view the undistorted image reflected by the planar portion of the mirror because a non-planar screen would introduce distortion which is not the aim of the Yoshimatsu et al invention.

Column 6 lines 18 et seq of Yoshimatsu et al discloses a main screen and sub-screen constructed by coupling three kinds of screens. Again no reference is made to the shape of the screens.

Column 6 line 53 – column 7 line 3 of Yoshimatsu et al discloses various embodiments of the invention as shown in Figures 11 – 13 in which the reflective mirror of the invention comprises a combination of planar and non-planar curved portions. No reference is made to the shape of the screens.

It is respectfully submitted that the above mentioned passages in Yoshimatsu et al clearly discloses a screen in which a flat section is interposed between two curved surfaces for use in a simulator. In contrast, the Applicant's claim 4 (original claim 1) requires the centre third part to have "a short cylindrical cross section". Thus the Applicant's claim 1 does not have a flat centre section as disclosed by Yoshimatsu et al.

With regard to paragraph 11 of the Office Action, the prior art made of record and not relied upon by the Examiner has been carefully considered. This prior art is not believed to affect the allowability of the new claims 4 and 5, nor the above submissions.

It was noted from paragraph 11 of the Office Action that some of the prior art made of record and not relied upon by the Examiner had been obtained from some of the citations mentioned in the Search Report for the Applicant's corresponding European Patent No. 01 30 4993. In accordance with the Applicant's duty to disclose all known prior art, the Applicant wishes to disclose all of the prior art made in the European Search Report on the Applicant's corresponding European Patent No. EP 01 30 4993. An Information Disclosure Statement disclosing the prior art in the European Search Report but not made of record by the Examiner is filed herewith. This prior art is not believed to affect the allowability of the new claims 4 and 5, nor the above submissions. In particular, it is emphasised that the new claim 4 is novel and inventive over US 5,181,355 to Skolnick et al and mentioned in the European Search Report. This is because Skolnick et al does not show collimated visual display apparatus comprising a curved collimating mirror and the Applicant's aspheric screen, wherein the collimated visual display apparatus is such that the aspheric screen has an outer curved surface that is viewed via the curved collimating mirror by a user of the collimated visual display apparatus. In Skolnick et al, it is the inner curved surface of the screen with the geodesic support structure that is viewed. In the Applicant's invention as claimed in claim 4, it would not be possible to use the screen of Skolnick et al with its geodesic support structure because the geodesic support structure would obscure the user's view of the screen. This is

because the geodesic structure is located on the outside and it is the outside that is viewed in the Applicant's invention as specified in the Applicant's new claim 4.

Also in accordance with the Applicant's duty to disclose all known prior art, the Applicant hereby discloses that it has a corresponding UK Patent No. GB 2,363,475. The UK Examiner cited three USA patents relied upon by the present Examiner, namely US 5,525,272, US 4,729,631 and US 3, 820,873. The UK Examiner also additionally cited GB 0,265,572 to Meinecke. This patent has been carefully considered and it is not believed to affect the allowability of claim 4, nor the above submissions.

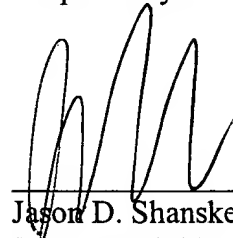
The Applicant's new claim 5 is believed to be allowable because it includes all of the features of claim 4.

For the Examiner's convenience, GB 0,265,572 (cited by the UK Examiner), WO 83 02028 (cited by the European Examiner) and Patent Abstracts of Japan/Japanese Patent Publication No. 10111534 (cited by the European Patent Examiner) are filed herewith.

Accordingly, it is respectfully submitted that this application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this **RESPONSE** is found to be **INCOMPLETE**, or if at any time it appears that a **TELEPHONE CONFERENCE** with Counsel would help advance prosecution, please telephone the undersigned or one of his associates, collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,

A handwritten signature in black ink, consisting of several loops and a final downward stroke, positioned above a horizontal line.

Jason D. Shanske
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